January 1949

Test 410: Long Model A

Tractor Museum
University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 410

SPECIFICATIONS

Type Tricycle Serial No. 4905275 Drive Enclosed Gear

Tread width: Rear 56 in. to 84 in. Front 8 in. Wheel Base 83 in.

Advertised speeds, miles per hour: First 3.34 Second 4.82 Third 6.46
Fourth 13.27 Reverse 4.17

Belt pulley: Diam. 8 in Face 8 in. RPM 1456 Belt Speed 3050 fpm

Clutch: Make Rockford Type Dry Disc Operated by Foot Pedal

Seat Monroe

Hydraulic Control: Yes

Brakes: Make Duo-Grip Type: External and Internal Shoe
Location Differential Shaft
Gear reduction (brake drum to rear wheel) 5.1 to 1
Operated by Foot Pedal
Locked by Latch on tractor platform
Equalization None. Pedals can be locked together.

Engine: Make Continental Serial No. 103446 Type 4 cylinder vertical
Head L Mounting Lengthwise Lubrication Pressure
Bore & stroke 3 7/16 in. x 4 3/8 in. Rated rpm 1800 Compression ratio 6.23:1
Port diameter valves: Inlet 1 23/64 in. Exhaust 1 1/16 in.
Distributor & coil: Make Auto-Lite Battery Exide 6-volt
Generator: Make Auto-Lite Starter: Make Auto-Lite
Carburetor: Make Marvel-Schebler Model TSX-338 Size 7/8 in.
Governor: Make Novi Type Centrifugal Variable Speed
Air Cleaner: Make United Type Oil washed wire screen
Oil Filter: Make Fram Type Replaceable element
Cooling medium temperature control: Thermostat

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 410

Date of test: May 18, 1949 to May 31, 1949
Name and model of tractor: LONG MODEL A
Manufacturer: LONG MANUFACTURING CO., INC., TARBORO, NORTH CAROLINA
Manufacturer's rating: None (Manufacturer claims 29 Belt Horsepower and 26 Drawbar Horsepower)

HORSEPOWER SUMMARY

	DRAWBAR	BELT
1. Sea level (calculated maximum horsepower based on 60° F. and 29.92" Hg.)	29.75	33.08
2. Observed maximum horsepower (tests F & B)	28.58	31.82
3. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly ASAE and SAE ratings)	22.31	28.12

REMARKS

Right rear hood hold down bolt and rear generator bolt support broke during limber-up test.

FUEL, OIL, and TIME

Fuel Gasoline Octane 74 * Weight per gallon 6.101

Oil SAE 20 To motor 1.237 gal. Drained from motor 0.820 gal.

Total time motor was operated 41 hours

* Octane rating taken from oil company's typical inspection data.

We, the undersigned, certify that this is a true and correct report of official tractor test No. 410.

L. F. Larsen
Engineer in Charge

C. W. Smith

L. W. Hurlbut

F. D. Yung
BOARD OF TRACTOR TEST ENGINEERS

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 410

All results shown on pages 2 and 3 of this report were determined from observed data and without allowances, additions, or deductions. Tests B and F were made with carburetor set for 100% maximum belt horsepower and data from these tests were used in determining the horsepower to be developed in tests D and H, respectively. Tests C, D, E, G, H, J and K were made with an operating setting of the carburetor (selected by the manufacturer) of 94.9% of maximum belt horsepower.

B E L T H O R S E P O W E R T E S T S

Horse-power	Crank Shaft Speed rpm	Fuel Consumption			Water used	Temperature		Barometer
		gal per hr	hp-hr per gal	lb per hp-hr	gal per hr	Cooling med °F	Air °F	Inches of Mercury
TEST B - 100% MAXIMUM LOAD - TWO HOURS								
31.82	1798	3.222	9.88	0.618	0.00	163	65	28.920
TEST C - OPERATING MAXIMUM LOAD - ONE HOUR								
30.32	1801	2.901	10.45	0.584	0.00	154	61	28.923
***TEST D - ONE HOUR**								
28.22	1798	2.724	10.36	0.589	0.00	147	58	28.940
TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)								
28.20	1798	2.714	10.39	0.587	- --	147	58	-- —
1.56	1976	1.160	1.34	4.538	- --	140	58	— —
15.10	1916	1.918	7.87	0.775	- --	144	57	------
28.39	1669	2.650	10.71	0.570	- --	148	56	-- ---
7.77	1966	1.505	5.16	1.181	- --	140	56	-- ---
22.12	1881	2.336	9.47	0.644	- --	148	58	-- ---
17.19	1867	2.047	8.40	0.727	0.00	144	57	28.973

* Formerly called RATED LOAD, see HORSEPOWER SUMMARY 3, page 1.

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 410

DRAWBAR HORSEPOWER TESTS

Horse-power	Draw bar pull lb	Speed mph	Crank shaft speed rpm	Slip on drive wheels %	Fuel Consumption			Water used	Temperature		Barometer
					gal per hr	hp-hr per gal	lb per hp-hr	gal per hr	Cooling med °F.	Air °F.	Inches of Mercury
TEST F - 100% MAXIMUM LOAD - 2nd GEAR											
28.58	2560	4.19	1805	5.95	------Not Recorded------				163	67	28.940
TEST G - OPERATING MAXIMUM LOAD											
22.31	3179	2.63	1806	14.60	------Not Recorded------				159	74	28.940
27.28	2432	4.21	1806	5.52	------Not Recorded------				158	68	28.940
26.74	1689	5.94	1800	3.42	------Not Recorded------				159	69	28.940
20.67	652	11.89	1800	2.46	------Not Recorded------				165	85	28.942
***TEST H - TEN HOURS - 2nd GEAR**											
22.53	2015	4.19	1798	5.41	2.487	9.06	0.673	0.00	162	76	28.895
TEST J - OPERATING MAXIMUM LOAD - 2nd GEAR											
23.73	2272	3.91	1809	13.17	------Not Recorded------				168	78	28.720
TEST K - OPERATING MAXIMUM LOAD - 2nd GEAR											
Lightest weight wheels and smallest tires suggested by manufacturer. All added weight removed from tractor (liquid, cast iron, or any other added forms.)											
21.74	2132	3.82	1802	12.30	------Not Recorded------				159	76	28.720

* Formerly called RATED LOAD; see POWER SUMMARY 3, page 1.

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 410

TIRES, WHEELS, and WEIGHT

		Tests F, G, & H	Test J	Test K
Rear Wheel: (each)	Type	Pressed Steel	Pressed Steel	Pressed Steel
	Liquid Ballast	353 lb.	None	None
	Added Cast Iron	578 lb.	None	None
Rear Tires:	No. Size & Ply	2 11-38 4 ply	2 11-38 4 ply	2 10-38 4 ply
	Type of Tread	Angle Action	Angle Action	Angle Action
	Make	General	General	General
	Air Pressure	12 lb.	12 lb.	12 lb.
Front Wheel: (each)	Type	Pressed Steel	Pressed Steel	Pressed Steel
	Liquid Ballast	None	None	None
	Added Cast Iron	98 lb.	None	None
Front Tires:	No. Size & Ply	2 5.50-16 4 ply	2 5.50-16 4 ply	2 5.50-16 4 ply
	Type of Tread	Triple Rib	Triple Rib	Triple Rib
	Make	General	General	General
	Air Pressure	28 lb.	28 lb.	28 lb.
Height of Drawbar		16 inches	16 1/2 inches	15 inches
Static Weight:	Rear End	4162 lb.	2300 lb.	2259 lb.
	Front End	1355 lb.	1143 lb.	1146 lb.
Total Weight as Tested (with Operator)		5692 lb.	3618 lb.	3580 lb.